

BioUniversal KFG+

Reduced gold, highly expansive universal alloy

BioUniversal KFG+ is an economic, golden universal alloy that is particularly suitable for the milling and double crown technique, as well as for veneering with low-fusing special ceramics and lab composites.

Au 37.7	Pt <1.0	Pd 15.9	Ag 32.6	In 12.2	Ir <1.0	Rh <1.0	Sn <1.0	Li <1.0	Fe <1.0	Nb <1.0
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Advantages

- Economic yellow universal alloy
- Excellent milling properties, especially suitable for the double crown technique
- Copper-free
- Low density
- Compatible with low-fusing special ceramics and lab composites (SR Nexco®)
- Certified biocompatibility

Indications*

Onlays, $\frac{3}{4}$ Crowns, Crowns, Telescope and Conus Crowns, Bridges, Wide Bridges, Posts, Bars, Attachments, Implant Retained Superstructures, Partial Dentures

Technical data

Colour	yellow
Type	4
Density (g/cm ³)	12.1
Melting range (°C)	920 – 996
Casting temperature (°C)	1060 – 1120
Oxide firing °C / minutes / vacuum	700 / 1 / vacuum
CTE 25–500 °C (* 10 ⁻⁶ K ⁻¹)	16.8
CTE 20–600 °C (* 10 ⁻⁶ K ⁻¹)	17.4
Vickers hardness	200
0.2% proof stress (MPa)	430
Modulus of elasticity (MPa)	92,600
Elongation (%)	5.0

* Depending on the individual thermal treatment



Dental lab work by Andreas Kunz, Germany

Certificate

Test material: BioUniversal alloys

Composition in mass %	Au	Pt	Pd	Ag	Cu	In	Ir	Zn	Miscellaneous
BioUniversal PKF	75.0	8.6	–	11.9	–	<1.0	<1.0	2.0	Fe <1.0, Ta <1.0, Rh <1.0
BioUniversal PdF	71.1	9.2	–	11.7	4.5	1.3	<1.0	1.5	Fe <1.0, Ta <1.0
BioUniversal	59.4	2.0	9.5	25.5	–	–	–	2.0	Fe <1.0, Re <1.0, Ru <1.0, Sn <1.0
BioUniversal KFG+	37.7	<1.0	15.9	32.6	–	12.2	<1.0	–	Rh <1.0, Sn <1.0, Li <1.0, Fe <1.0, Nb <1.0
BioUniversal E	–	–	40.0	52.2	–	1.4	–	<1.0	Sn <5.5, In 1.4, Re <1.0, Ru <1.0

Manufacturer

Ivoclar Vivadent Inc., 175 Pineview Drive, Amherst, NY 14228, USA

Corrosion resistance

The test was conducted according to the international norms ISO 22674 and ISO 10271: Static immersion test with analytical determination of the metal ion release after a 7-day immersion.

Result: The metal ion release after 7 days of immersion was not significant and below the limited set in the standard.

Test institute: Department of Biomedical Materials Science, University of Mississippi Medical Center, 2500 North State Street, Room D528, Jackson, MS 39216-4505

Cytotoxicity

The Agar Diffusion test determines the biological reactivity of cell culture on the test material.

Result: The test material is considered non-cytotoxic and meets the requirements of the Agar Diffusion test according to ISO 10993-5.

Mutagenicity

Test institute: Toxikon Corporation, 15 Wiggins Avenue, Bedford, MA 01730
An Ames test was conducted to determine the potential carcinogenic effects.

Result: No evidence of mutagenicity was detected.

Kligman Maximization

This test determines the allergic properties and/or the sensitization capacity of the alloy.

Result: Based on the test guidelines, the test protocol did not show any reactions (0% sensitization) of the alloys.

Sensitivity of the oral mucosa

Test of contact sensitization of these alloys on buccal oral mucosa tissue.

Result: No reactions were determined in connection with these alloys.

Test institute: Toxikon Corporation, 15 Wiggins Avenue, Bedford, Massachusetts

Amherst, September 2016



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passion vision innovation